receiving upstream supported and non-supported wireless signals at a plurality of remote units distributed in a coverage area;

providing signals from the remote units to a plurality of input ports;

monitoring input power levels of the signals received at one or more of the plurality of input ports;

combining signals from the plurality of input ports at a node;

determining individual control signals for each of the input ports based on a weighting function that is proportional to the monitored input power levels such that the combined power does not exceed a predetermined level, and

gain controlling the signals received at the input ports in response to the control signals.

13. The method of claim **12** further comprising monitoring the combined power level of signals combined at the node.

14. A method for controlling the signal levels of a wireless distribution system, the method comprising:

receiving upstream supported and non-supported wireless signals at a plurality of remote units distributed in a coverage area;

providing signals from the remote units to a plurality of input ports;

monitoring the input power level of the signals received at each of the input ports;

controlling the gain of the signals received at each of the input ports in response to a control signal;

combining the signals from the plurality of input ports at a node;

monitoring power levels of the combined signals;

determining weights for a weighting function that is proportional to power received at each input port, as determined by the input power monitors such that the power of the combined signals does not exceed a predetermined level; and

providing the control signals to each input port based on the weighting function.

15. A wireless distribution system, comprising:

a plurality of remote units distributed in a coverage area to receive upstream supported and non-supported wireless signals and to provide the wireless signals through the distribution system to one or more input ports;

a plurality of input power monitors operatively connected to the one or more input ports to determine power levels of the wireless signals received at the input port;

a plurality of variable gain controllers to control the gain of the wireless signals received at the one or more input ports based on a predetermined threshold wherein a saturation level is not reached.

16. A wireless distribution system comprising:

a plurality of remote units distributed in a coverage area to receive upstream supported and non-supported wireless signals and to provide the wireless signals through the distribution system to one or more input ports;

a plurality of input power monitors operatively connected to one or more of the input ports to determine power levels of the wireless signals received at the input ports;

a plurality of variable gain controllers to control the gain of the wireless signals received at one or more of the input ports;

a node to combine the wireless signals from the plurality of input ports;

a combined power monitor to determine a power level of the signals combined at the node; and

a controller to provide control signals to control one or more of the variable gain controllers so that an overflow condition does not occur at the node.

17. The wireless distribution system of claim **16**, wherein the signals are converted to digital signals before such signals are combined at the node.

18. A method for controlling the signal levels of a wireless distribution system, the method comprising:

receiving a spectrum of upstream supported and non-supported wireless signals at a plurality of remote units distributed in a coverage area;

digitizing the received signals;

transmitting the digitized signals over one or more transmission links to a plurality of input ports operatively connected to a node where the signals are combined;

monitoring input power kvels of the signals received at one or more of the plurality of input ports;

monitoring the combined power level of the signals combined at the node;

determining individual control signals for controlling the signal levels of each of the input ports based on a weighting function that is proportional to the monitored input power levels such that the combined power as determined by the combined power monitor does not exceed a predetermined level, and

attenuating the signals received at each of the input ports in response to the control signals.

19. The method of claim **18** further comprising transmitting the signals combined at the node to at least one upstream node where the combined signals are further combined with other signals.

20. The method of claim **19** further comprising monitoring the combined power level of the signals combined at the at least one upstream node;

determining individual control signals for controlling the signal levels of each of the signals supplied to input ports of the at least one upstream node based on a weighting function that is proportional to the monitored power levels of such signals such that the combined power as determined by a combined power monitor for the at least one upstream node does not exceed a predetermined level, and

controlling the gain of the signals supplied to one or more input ports to the upstream node in response to the control signals.

21. The method of claim **20**, whereih controlling the gain of the signals supplied to one or more input ports comprises filtering.

22. The method of claim **21**, wherein the filtering comprises adaptive filtering.

23. A digital expansion unit, comprising:

a plurality of input ports to receive signals comprising upstream supported and non-supported signals from a plurality of digital remote units distributed in a coverage area;

a node to digitally combine signals from the input ports;

a plurality of input power monitors operatively connected to one or more of the input ports to determine the level of signals received at the input ports,

a plurality of gain controllers to adjust the gain of signals received at some or all of the input ports;

a combined power monitor to determine the combined signal level of signals combined at the node; and

a controller to provide control signals to control one or more of the gain controllers wherein an overflow condition is avoided for signals combined at the node.

24. A wireless distribution system comprising one or more digital expansion units, the digital expansion units comprising:

a plurality of input ports to receive signals comprising upstream supported and non-supported signals from a plurality of digital remote units distributed in a coverage area;

a node to digitally combine signals from the input ports;

a plurality of input power monitors operatively connected to one or more of the input ports to determine the level of signals received at the input ports,

a plurality of gain controllers to adjust the gain of signals received at some or all of the input ports;

a combined power monitor to determine the combined signal level of signals combined at the node; and

a controller to provide control signals to control one or more of the gain controllers wherein an overflow condition is avoided for signals combined at the node.

25. A wireless distribution system, comprising:

a plurality of remote units distributed in a coverage area to receive upstream supported and non-supported wireless signals in the coverage area;

a node to combine a plurality of wireless signals from one or more of the plurality of remote units;

a power monitor to determine a power level of the wireless signals combined at the node; and a variable gain controller to control the gain of the signals combined at the node.

26. The wireless distribution system of claim 25, wherein the signals received at the plurality of remote units comprise a frequency spectrum that is digitized for distribution over the wireless distribution system.

27. The wireless distribution system of claim 26 wherein the digitized wireless spectrum is transmifted, at least in part, over a fiber optic transmission line.

28. The wireless distribution system of claim 25, wherein the variable gain controller comprises a filter.

29. The wireless distribution system of claim 28, wherein the filter comprises an adaptive filter.

30. The wireless distribution system of claim 25, further comprising a transmission link to transmit the signals combined at the node to at least one upstream node where the combined signals may be further combined with other wireless signals.

31. The wireless distribution system of claim 30 further comprising a power monitor operatively connected to an output of the at least one upstream node to monitor the power level of the signals combined at the upstream node; and

a variable gain controller to control the power level of signals combined at the at least one upstream node such that the output power level at the upstream node does not exceed a predetermined level.

32. A method for controlling the signal levels of a wireless distribution system, the method comprising:

receiving a spectrum of upstream supported and non-supported wireless signals at a plurality of remote units distributed in a coverage area;

digitizing the received signals;

transmitting the digitized signals over one or more transmission links to a node where the signals are combined;

monitoring the power level of the combined signals at the node; and

controlling the gain of the combined signals in response to the monitored power level.

33. The method of claim 32 further comprising transmitting the signals combined at the node to at least one upstream node where the combined signals are farther combined with other wireless signals.

34. The method of claim 33 further comprising monitoring the power level of the signals combined at the at least one upstream node; and

controlling the gain of the signals combined at the at least one upstream node in response to the monitored power level.

35. The method of claim 34 wherein controlling the gain of the signals comprises digital filtering.

36. The method of claim 35 wherein the filtering comprises adaptive filtering.

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